

Shutdown Safety Meeting Electrical Information

John Musson
July 27, 2004



Electrical Safety

Class and Mode

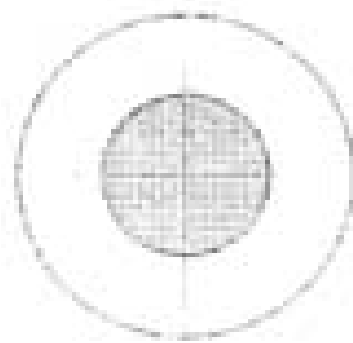
- Class defines the Hazard Level ($< 50\text{V} / 50\text{A}$)...I, II, or III
- Mode defines the work “configuration,” ...I, II, or III
- Risk to personnel is a combination of class and mode
- Generally, we will always work in Mode 1 – completely de energized
- Sometimes Mode 2 work is required for measurement on powered equipment with “normal protective barriers removed.”
 - Unless this is on Class 1 (low hazard) equipment, a work control document is usually required.
- Include work control documentation and training in work planning
- “Electrical Shorts” Training is online at:
http://www.jlab.org/div_dept/train/webbasedtraining.html (under JUT training)
http://www.jlab.org/group/training/Elec_Safety_Shots/CLASSES_MODES_RESPONSIBILITIES.ppt

“Electrical Safety is No Accident!”

- Busy electrical areas:
 - W1 / Separator
 - Injector
 - End of NL
 - Halls
 - Arc Service Buildings
- Watch for:
 - Wet areas
 - Ladders
 - Energized magnets
 - Hipotting
 - Trims, quads

Stay Focused.....

- Understand all sources of stored energy in your work
 - Electrical
 - Gas Pressure....burst valves on Cryomodules!!
 - Vacuum Windows
 - Hydraulics
 - Springs, etc., on mechanical/electromechanical devices
 - Magnets
- Don't feed open wave guides
 - There should be none!
- “Protect yer skull!”



More Good Ideas From Before.....

- Check and verify equipment labeling as you work
 - “Fed from” information
 - Panel schedules
 - Report and correct problems
- Use proper equipment
 - Grounded electrical tools/equipment (or otherwise protected - i.e. double insulated)
 - GFCIs save lives....Test them before use
- Ensure proper Equipment-Specific Training and/or LT&T is current
- Don't misuse students!
- Electrons → Electricity.....Morons → Mortality?

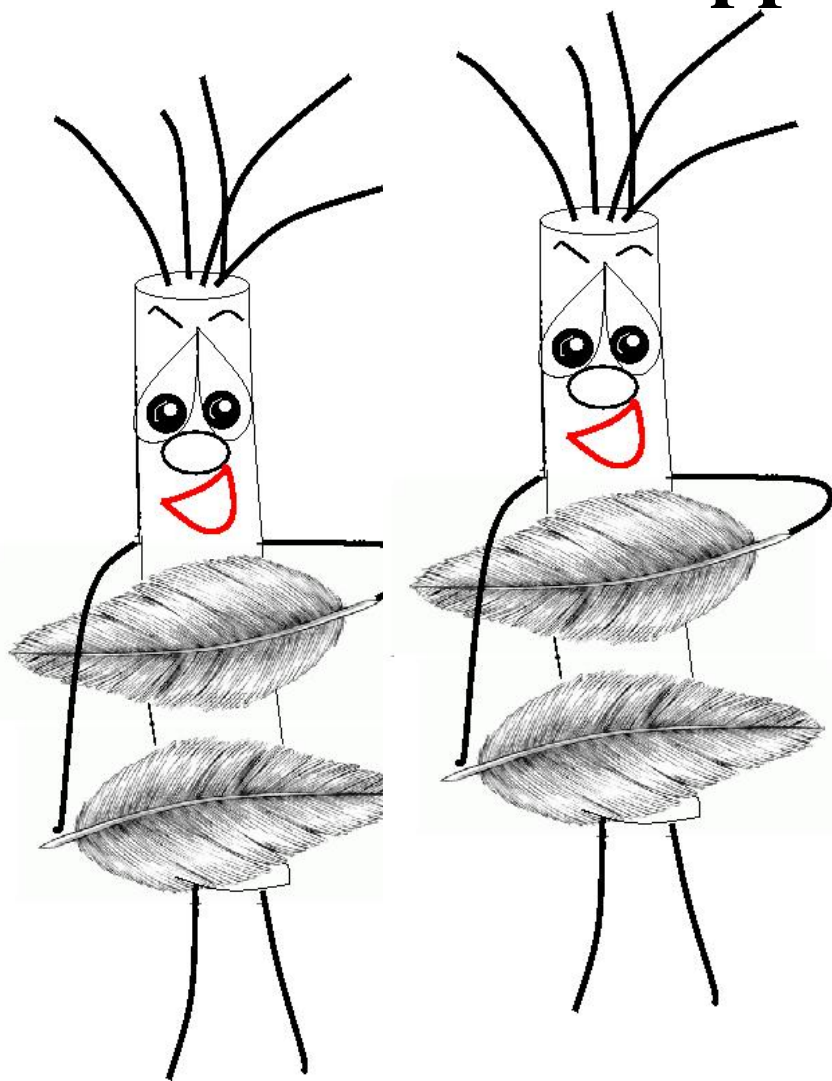


A Note on Extension Cords.....

- Lots of rooftop activity means extension cords! In that vein....Several (4) extension cord lockers with testing stations have been installed.....USE THEM!



Wire Strippers!! Woo Hoo!



- Don't use box cutters
 - Trial units available
- Kevlar gloves available
 - (See Sherry Thomas)
- Heliax strippers available
 - Pencil-sharpener device attached to drill
 - New safety procedures on-line at:
 - www.jlab.org/eh&s/
 - http://opsntsrv.acc.jlab.org/ops_docs/online_document_files/EES_online_files/Heliax_Cable_Prep_Tool_Safety_proc.pdf

Hygiene Matters!



"PARTICLES, PARTICLES, PARTICLES."